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ABSTRACT

This Strategic Plan delineates the Information Technology (IT) mission for Trident Technical College (TTC) in South Carolina. The issues addressed in the plan include, but are not limited to, the following: (1) Student need for training and support increases as students learn to use and become reliant upon technological tools and services; (2) The training of faculty and staff is a major component of IT success; and (3) The demand for IT professionals continues to exceed the supply. Acquiring and retaining qualified staff is a continuing challenge. This report delineates these five IT goals for TTC: (1) To provide logically integrated information systems that support efficient, effective TTC business operations, instructional support and delivery, and student services; (2) To establish and communicate college priorities for IT as they relate to teaching and learning; (3) To provide an environment that promotes student success by providing access to relevant resources and services to support academic programs; (4) To provide effective management of IT resources and services, including software, hardware, and personnel; and (5) To provide the network infrastructure to support full-function access to information, anytime, anywhere, for the TTC community. Each goal presented in the report includes objectives and proposed strategies for implementation. (NB)

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ED 477 585

A Strategic Plan for the Implementation of Information Technology 2000 – 2005

Introduction

Information Technology (IT) is a merger of traditional computer technologies (i.e., text and data) and traditional telecommunication technologies (i.e., voice, graphics, video and audio). Information Technology is a powerful tool that enhances access to learning, ignites the discovery of new knowledge, and inspires collaborative projects. TTC is a "learner-centered" institution, and IT plays a critical role in providing new competitive advantages as transactions are collapsed in time and distance. The college believes it is essential to implement IT according to a strategic plan, conceived by the key end-users and fully supported by the college's executive leadership.

IT at Trident includes not only hard technology but also the "soft technology" or intellectual processes related to information literacy. TTC's students develop competencies in information literacy that enable them to maximize their interactions with IT services and resources, transfer skills to new environments and become lifelong learners.

Information Technology adds value to virtually all services at Trident. As technologies add convenience, access to knowledge and information becomes an "instant reality" and collaborations occur in real time. This networking of human resources with information resources, without regard for organizational boundaries, either on or off campus, opens a new electronic window into the college, highlighting an energized community of learners for the world to see.

The evolution of Information Technology is driving the changing parameters for competing in the education industry and is significantly impacting the educational process. Trident is developing its Strategic Plan for IT implementation to manage that impact, and to enable the college to leverage technology in ways that maximize the advantages for our students, faculty, and staff. Equally important, the college outlines goals and objectives in its plan that are needed to achieve its vision.

Mission

"Trident Technical College is a comprehensive, public, two-year institution, which provides quality education and promotes economic development in Berkeley, Charleston, and Dorchester counties. Trident is a member of the State Board of Technical and Comprehensive Education System. As an open-door institution of higher education, the college provides lifelong learning opportunities for traditional and nontraditional students. These opportunities enhance the economic, social, and cultural life of the community. Accessible and responsive to the needs of this multicultural community, Trident prepares students for a rapidly changing global environment.

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Each semester 8,000 to 10,000 credit students enroll in programs leading to college transfer associate degrees and technical associate degrees, diplomas, and certificates. The curriculum includes programs in Arts and Sciences, Business, Industrial and Engineering Technologies, Health Sciences and Nursing, Community, Family and Child Services, Public Services, and Hospitality and Tourism. To foster student success, Trident provides developmental education and comprehensive student success.

As a state and national resource, Trident provides continuing education courses, customized education and training for business, industry and government, and a variety of activities and services, including facilities for Special Schools employment training programs."

Vision

"TTC's vision is to be a leader among two-year colleges in providing relevant educational programs and services in a highly technical and competitive global environment."

Trident Technical College envisions a 21st century information and learning environment that reaches anyone at any place, and at any time. The processes of teaching and learning are facilitative, interactive, learner-centered, and self-directed. Access to knowledge and information is not constrained by institutional campus "brick and mortar" resources. Trident's "global" network continues offering flexible and accessible educational programs and services that maintain equality among diverse and non-traditional student populations.

The information and learning environment provides seamless access to IT resources. Administrative information system resources are used to integrate learning services that support students, faculty, and staff. These resources are used for the improvement of knowledge, communication, technical and non-technical training, enhancement of pedagogical methods, effective and efficient use of technologies, collaborative curriculum development, sharing of effective teaching and learning strategies, access to global learning opportunities, continuous improvement of student information processes and business processes.

This environment facilitates the distribution and integration of any kind of information–text, data, voice, graphics, video and audio. Individual college networks evolve into a single digital IT network infrastructure with adequate bandwidth to support present demands and future growth. Classrooms are IT capable and include access to the Internet, and robust multimedia and projection capabilities.

The Learning Resources Center (LRC) is a model center for IT resource utilization. The LRC provides electronic and print resources that are accessible and searchable through an integrated information system, which is accessible from both on and off campus. The LRC provides equivalent support for learning-centered activities whether campus-based or in a distance learning format. The LRC provides a comprehensive information literacy program that pervades the TTC information and learning environments.

Students, faculty, and staff communicate seamlessly over a unified messaging system that integrates voice mail, email, and FAX technology. The environment is equipped with secure conveniences including online calendaring, directory services, news, and departmental web sites with search capabilities. All TTC stakeholders, students, faculty, staff, alumni, parents, benefactors, and the college's supply chain will enjoy access, as appropriate, to the information and learning environments.

Student Services, Financial Services, Human Resources, Academic Affairs, Development, and Facilities Management enjoy the use of fully integrated systems to conduct the business of the college. Management Information Systems will be available to the college's executive leadership for strategic planning and both internal and external reporting requirements.

Strategic Issues

Throughout this Strategic Plan, The Information Technology Advisory Team (ITAT) makes the assumption that the benchmarks that measure the ability of the college to compete in the global education industry are changing, largely due to the impact of Information Technology on the whole of society. Subsequently, the following strategic issues apply:

- Ensuring the quality of campus-based instruction and distance learning initiatives becomes more challenging as the use of technology increases.
- Expectations are growing in the business and industry communities for TTC to produce technology and information-literate graduates.
- Expectations regarding access to technology resources are growing within the student community.
- The demand for IT professionals continues to exceed the supply. Acquiring and retaining qualified staff will continue to be a challenge.
- As students learn to use, and come to rely on technological tools and services, their need for training and support increases.
- The rate of change in technology and information exacerbates the need for students to be able to select relevant applications, evaluate resources, apply skills in new settings, and to learn to learn.
- Rising support costs associated with user-centric information systems continue to be a challenge for the college.
- The training of faculty and staff will emerge as a major component of IT success.
- Successful deployment of new Information Technologies will require a paradigm shift that replaces IT staff's system-centric focus with user-centered policies and procedures.

Goals, Objectives, and Strategies

Goal 1: Information Systems

To provide logically integrated information systems that support efficient, effective TTC business operations, instructional support and delivery, and student services.

- Objective A: To build a comprehensive and well-documented college information environment.

  Areas of Responsibility: Financial Services, Academic Affairs, Marketing Services, User Support

Strategies

- Define or refine IT standards.
- Identify tools to be used (i.e., universal messaging).
- Provide training as appropriate.
- Identify data components for migration to relational formats.
- Coordinate management of voice, data, video, library resources, and other IT assets.
- Publish a clear, succinct document that explains the existing IT environment, identifies areas of responsibility, and tells customers how to obtain IT software, hardware and training support.
- Investigate and establish adaptive technologies that support information access for all customers.
- Publish a comprehensive list of supported applications.
- Evaluate and revise College-wide policies and procedures in response to technological advances and College initiatives.
- Routinely evaluate and revise College website guidelines in response to technological advances and College initiatives.
- Establish and maintain delivery standards for multimedia content

- Objective B: To build the technical infrastructure that will allow information systems integration to become a reality.

  Areas of Responsibility: Financial Services, User Support

Strategies

- Perform continuous assessment of IT vision and layout.
- Enhance and upgrade existing infrastructure.
- Evaluate and acquire identified tools that fit within the vision framework.
- Research market trends.
- Prioritize web projects in relation to College initiatives and resource management.

- Objective C: To build a college-wide personnel support infrastructure for an integrated information environment.

  Areas of Responsibility: Financial Services, User Support

Strategies

- Provide integrated help desk facilities, both electronic and human.
- Evaluate training needs.
- Develop a project management model.
- Acquire and establish IT personnel and positions as needed.
- Continuously monitor organizational structure to ensure that it is conducive to innovation and mission.
- Provide functional training in both classroom and on-line environments.
- Provide E-Commerce solutions through encryption standards.
- Create a secure Intranet that allows College workgroups to become more efficient and share internal data.

- Objective D: To develop integration among business processing systems.

  Areas of Responsibility: Financial Services, Academic Affairs, Student Affairs, User Support

Strategies

- Evaluate and reengineer transactional processes.
- Implement relational databases.
- Migrate centralized applications to client/server.
- Conduct market evaluation for potential software solutions.
- Evaluate internal customer needs.
- Emphasize customer ease in use of technology.
- Provide sharing of electronic resources (data, text, images, sound, video) across the infrastructure.
- Provide training as appropriate.
- Provide on-demand, self-service database access anytime, anyplace.
- Provide a common user interface that connects students, faculty, and staff to one another and to information they need.
- Periodically evaluate online services and propose enhancements based on College business procedures, technological advances, and customer expectations.

Goal 2: Teaching and Learning Initiatives

To establish and communicate college priorities for Information Technology as they relate to Teaching and Learning.

- Objective A: To establish priorities for the deployment of curriculum delivery methods.

  Areas of Responsibility: Financial Services, Academic Affairs, User Support

Strategies

- Continue market analysis of higher education and the benchmarking of global issues and current and projected trends.
- Facilitate discussions of new trends in teaching and learning.
- Compile and communicate research results.
- Foster a collaborative relationship among faculty in the development of interactive curriculum design for online learning environments.

- Objective B: To identify and allocate resources for the training and support of faculty and staff.

  Areas of Responsibility: Financial Services, Academic Affairs, User Support

Strategies

- Pursue partnerships between faculty and IT personnel.
- Provide faculty and staff with the software and equipment necessary to perform their jobs.
- Assess and provide for the training needs of faculty.

- Objective C: To provide an effective technology support environment for teaching and learning methodologies.

  Areas of Responsibility: Financial Services, User Support, Development, Academic Affairs

Strategies

- Adequately equip classrooms to enhance learning using modern technology.
- Evaluate training needs and establish necessary training methods.
- Provide instructional design assistance.
- Pursue external funding opportunities.
- Provide training and support that empowers faculty and staff to utilize distance-learning technologies.

- Objective D: To provide a systemic approach to Information literacy.

  Areas of Responsibility: Academic Affairs

Strategies

- Utilize the Library and Information Resources Advisory committee to provide leadership and coordination toward a campus-wide information literacy initiative.

Goal 3: Student Support

To provide an environment that promotes student success by providing access to relevant resources and services to support academic programs, on and off campus.

- Objective A: To provide students with access to services which support the teaching and learning environment and promotes student retention.

  Areas of Responsibility: Student Affairs, Financial Services, Academic Affairs, User Support

Strategies

- Implement access for students to begin and complete the enrollment process by applying, registering, and paying tuition and fees online.
- Establish online access for students to apply for financial aid, assess the status of the financial aid application, review financial aid awards and retrieve account balances.
- Enable students to access grades, request transcripts and update student records online.
- Provide academic and student services online whenever appropriate.
- Provide comprehensive support in the use of online learning environments for faculty and students.
- Encourage the development of online learning communities as an integral part of a learner centric curriculum

- Objective B: To make current, state-of-the-art learning resources available on and off campus.

  Areas of Responsibility: Academic Affairs, Financial Services

Strategies

- Provide hardware compatible with LRC systems to enable full-function capability of LRC browser capable modules.
- Provide system-wide network interfaces to enable access to LRC resources and services.
- Monitor curricula to ensure that relevant information resources are offered which are consistent with current professional practice.
- Increase the availability of digitized print and video materials.
- Convert the closed circuit VIS system to digital format.
- Provide a coordinated approach to copyright issues.

- Objective C: To continually evaluate the mediation between the user and the technology.

  Areas of Responsibility: User Support Services, Academic Affairs

Strategies

- Develop a comprehensive approach to assessing user satisfaction and success with technology and information resources.
- Provide coordinated and updated opportunities for training related to technology and information resources, in a variety of formats.
- Coordinate user education efforts between curricular offerings, faculty and staff support.
- Monitor curricula offerings with embedded technology and information resources to ensure that appropriate user education is available for faculty, staff, and students.

Goal 4: Resource Management

To provide effective management of IT resources and services, including software, hardware, and personnel.

- Objective A: To establish an effective asset management process that includes the phased replacements of assets to maintain cutting edge position.

  Areas of Responsibility: Financial Services

Strategies

- Provide for the cyclical replacement of computing and network infrastructure assets.
- Connect the life cycle management of computing and network assets directly to the annual budgeting process.
- Consider IT funding to be an essential utility and include in the college's operating budget.
- Develop and implement a maintenance plan for all IT assets.

- Objective B: To provide training and compensation incentives to attract and retain competent human resources.

  Areas of Responsibility: Financial Services

Strategies

- Provide flexibility in IT personnel job descriptions and compensation levels to more accurately reflect industry standards.
- Emphasize, and support professional development as part of the budget process.
- Create a mechanism that allows increased compensation for IT personnel that is not always tied to direct supervisory responsibilities.
- Adequately compensate technical leaders/mangers based on their value to the institution.
- Don't always tie the size of staff to compensation levels.
- Review position descriptions to ensure descriptions are not so narrow/confining.

- Objective C: To provide for the evaluation of emerging technology and product trends, and to incorporate these evaluations in college planning at all levels.

  Areas of Responsibility: User Support Services, Academic Affairs, Financial Services, Student Affairs

Strategies

- Encourage leading-edge users and provide them with support.
- Partner with leading vendors to capture emerging technology potentials.
- Provide as much information as possible in an electronic format.
- Provide leadership for copyright management in an electronic environment.

Goal 5: Connectivity Infrastructure

To provide the network infrastructure to support full-function access to information, anytime, anywhere, for the TTC community.

- Objective A: To provide a backbone for the college network that supports full-function access and interoperable connections across the system, to and from external locations, which include the ability to accommodate new services as they become available.

  Areas of Responsibility: Financial Services

Strategies

- Categorize and manage the campus backbone/infrastructure as a strategic asset.
- Provide for the maintenance, upgrade, and expansion of the campus backbone/infrastructure like other essential utilities.

- Objective B: To develop a network environment that encourages students to access network services with their own equipment, both on and off campus.

  Areas of Responsibility: Financial Services

Strategies

- Provide a common user interface for students, faculty, and staff that enable access to institutional information from local and remote locations.
- Construct explicit institutional standards for network connections and protocols.
- Ensure that the design and extension of web applications is congruent with existing database structure and network protocols in enhancing online services.

- Objective C: To provide secure network applications and services to all college stakeholders.

  Areas of Responsibility: Financial Services

Strategies

- Provide firewall protection devices at Main, Palmer, and Berkeley campuses.
- Standardize desktop security and virus protection applications.
- Provide for the automation of security and virus protection applications.

- Objective D: To develop a college disaster recovery procedure.

  Areas of Responsibility: Financial Services, Academic Affairs, Student Affairs

Strategies

- Plan for and equip a backup administrative information-processing site.
- Include information technology components in all college disaster planning.
- Review and update the existing college emergency response/disaster plan.

Current Plans for Improvement: December 1999

The existing administrative software, SIS PLUS2000, FRS, and HRS will be replaced with a fully integrated system from Datatel, Inc. known as "Colleague." This system will run on True64 UNIX, replacing the current VMS operating system. The existing Digital VAX VMS cluster will be replaced by a Compaq Alpha cluster system during the first quarter of FY 2000. This new processing platform will allow the college to migrate all of its primary business and administrative functions from a text-based environment to a graphical user interface (GUI).

The financial component of the Colleague application will become operational in July 2000. The student services web-based component, including web-based student registration, will become operational in a prototype mode during the second and third quarter of FY 2001. Trident anticipates full Datatel Colleague operational capability by the end of 2001.

During the next (12-18) months the college projects the replacement of the edge, intermediate and core router systems. The new router package will consist of a 7500 series Cisco core router, Cisco PIX 515 series firewall system, and a 3640-edge/gateway router system. In addition, the Palmer Campus LAT/Async data network will be replaced in the next 9-12 months with a switched Gigabit fiber backbone/100Base-T local area network. The Palmer Campus edge/gateway router system also will be replaced during the LAN upgrade. All edge/gateway router systems will be ATM and IMA capable.

A migration from the 16 MB/s token ring backbone to a dual switched Gigabit backbone on Main Campus is projected to start during the FY 2000-2001 budget years. Segments of the 16 MB/s local token rings will be migrated from token ring to switched 100Base-T environment. The complete migration from token ring to switched Ethernet is projected to be complete on Main and Berkeley campuses by 2005 - 2006.

APPENDIX A

Current Assets

Trident's campus network currently consists of (28) 802.5 token ring and (3) 802.3 Ethernet local area networks, These (LAN) segments are distributed over 3 campuses and (20) buildings. Main campus buildings are interconnected via a (24/48) strand, 62.5/125-micron token ring fiber optic backbone operating at 16 MB/s. These LANs currently consist of 2,115 IP hosts and 1,560 NETBIOS/Netbeui clients supported by (7) Cisco Multi-protocol routers, (1) Digital/Compaq VAX VMS cluster, (2) AS/400 units, (30) source route bridge systems, (50) applications/file/print server systems, and (70) networked print systems.

Attachment X depicts the college's current fiber optic backbone configuration.

Attachment XY depicts the college's file, application, and print server components.

Data communications between the two remote campuses is achieved via the Main Campus Cisco 4000-M edge/border router and dedicated data T-1 Frame Relay CDS/PVCs circuits. The Main, Palmer and Berkeley T-1 data communications circuits connect the three campuses to each other and also provide access to external locations and the Internet.

The Berkeley Campus data network basically mirrors the Main data network with a 16 MB/s fiber backbone and 16 MB/s local area network, (LAN) segments. Although Palmer Campus is connected to the Main Campus and the outside works via a T-1 circuit the internal LAN segments consists primarily of local area transport/asynchronous, (LAT/Async) communications links. Consequently, the Palmer Campus data network is primarily restricted to a "text based" communication mode, i.e., graphical user interface, (GUI based client /server computing) and GUI-based Internet access is not possible.

Approximately 70 percent of the college's client systems use Netscape, (various versions) and the remaining 30 percent use various versions of Internet Explorer. The type of client systems installed throughout the three campuses is as follows.

The breakdown for network connectivity and topology is as follows.

80486 CPU and below	1.045
Pentium	1,115
System running Win	3.11 - 500
Systems running Win 95/NT	1,660

System	Network Topology
VMS Cluster	10Base-2 (thick wire) Ethernet
Main - Client/Server Systems	16 MB Token Ring
Palmer	LAT/Async Stand-alone 10Base-T (LRC)
Client/Server System	Stand-alone Token Ring
Berkeley-Client Server Systems	16 MB Token Ring
Wide Area Network	T-1 Frame Relay

Protocols In Use:

Protocol	Average Traffic
IP	49%
NETBIOS	50%
Other	1%

Attachment XYZ depicts the college's data network current capacity and components.

The college maintains over (34) computer laboratories dedicated to student, faculty, and staff instructional support. All laboratories are connected to the college's data backbone except the Palmer Campus laboratories. Palmer laboratories will be connected to a modern data network as a result of campus renovations during the 3rd/4th quarter of 2000.

Attachment XYZZ depicts the college's installed laboratory client systems.

Administrative computing consists primarily of two-clustered Digital VA/VMS mid-range systems with associated peripherals. The major administrative applications supported include applications such as Student Information System (SIS), Financial Records System (FRS), Human Resources System (HRS), Alumni Development System (ADS), E-mail, and Learning Resources Center databases. SIS PLUS2000 is the college's current Student Information System.

APPENDIX B

The Information Technology Advisory Team

Name	Routing Code & Phone Extension
Don Ammons	AS-M, ext. 6045
Lynne Ankersen	AR-M, ext. 6137
Ben Black	HT-P, ext. 5557
Judy Everett	DV-C, ext. 6195
Joe Gibson	US-M, ext. 6311
Jean Gooch	CF-B, ext. 8013
Bob Hobday	IT-M, ext. 6207
Lisa Irvin	NU-M, ext. 6445
Brent Jonas	PO-C, ext. 6361
Alan Kalameja	ET-M, ext. 6369
Earl Murphy	AH-M, ext. 6350
Pat Robertson	BT-M, ext. 6150
Larry Rosintoski	PS-P, ext. 5617
Bernie Straub	US-M, ext. 6083
Roscoe Thornthwaite	DL-M, ext. 6474
Sandra Winecoff	LRC-M, ext. 6088

APPENDIX C

Current Assets of TELLI

Trident Technical College's academic distance learning program is officially named "Trident's Extended Lifelong Learning Initiative (TELLI). It consists of six different delivery programs:

1. Instructional Television Fixed Service (ITFS)
2. Satellite
3. Compressed video
4. Broadband video
5. On line
6. Course in a bag

Trident's current TELLI assets:

1. Main campus

   A. ITFS/Satellite ready origination classrooms (3)
   B. Compressed video origination classroom (1)
   C. Production studio (1)
   D. 4 channel transmitter/monitors/router
   E. VTEL compressed video units (2)
   F. Satellite dishes with receivers (3)

2. Berkeley campus

   A. ITFS/Satellite ready receive classrooms (2)
   B. Broadband video origination classroom

3. Palmer campus (ITFS/Satellite receive classrooms) (3)
4. Charleston Air Force Base site (ITFS/Satellite receive classrooms) (2)
5. Microwave towers / transmitters and receivers (5)
6. Complex for Industrial & Economic Development

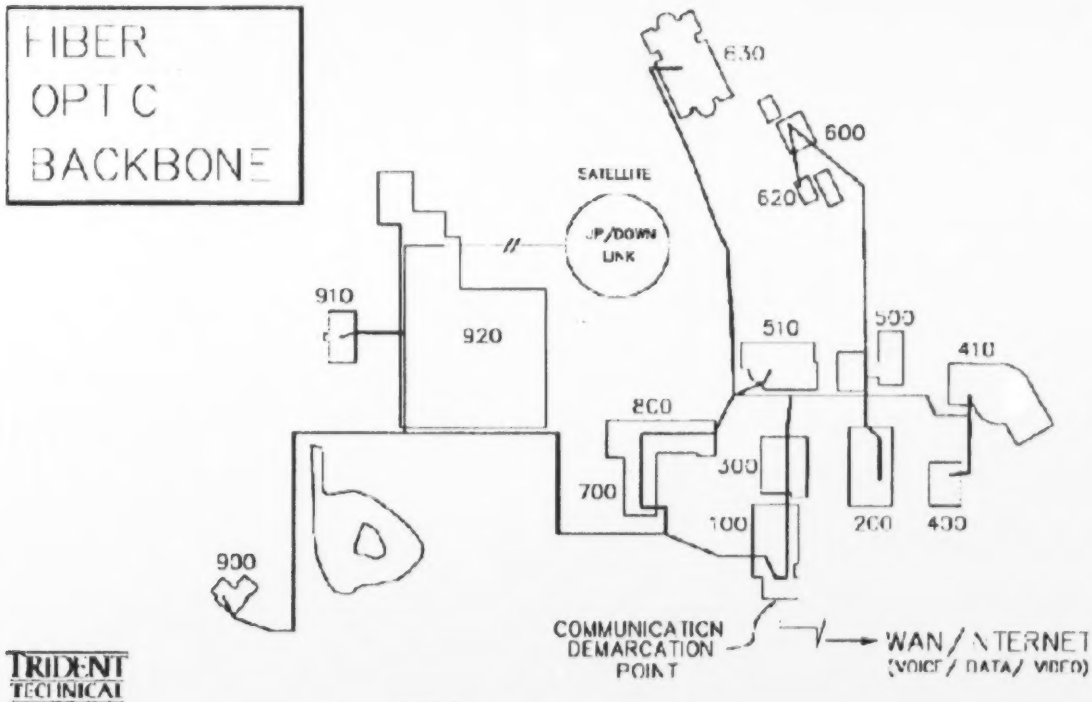
   A. Continuing Education Center

      1) Compressed video/ITFS classroom origination capable (2)
      2) Compressed video classroom equipped with ISDN access (1)
      3) Satellite receive capable classrooms (10)

   B. Industrial Training Center

      1) Uplink antenna (1)
      2) Downlink antennas (2)
      3) ETV receivers (3)

APPENDIX D



TRIDENT TECHNICAL COLLEGE

FILENAME: \CAMPUS\FBR99
REFERENCE: 0020575
DATE: 11/05/99

NOTES

.....FIBER BACKBONE CONSISTS OF (24/48) STRANDS OF 62.5/125 MICRON, DUAL WINDOW, (850 & 1300 NM) AT&T LIGHTPACK FIBER CABLE.

.....BACKBONE TOPOLOGY IS IEEE 802.5 TOKEN-PASSING RING.

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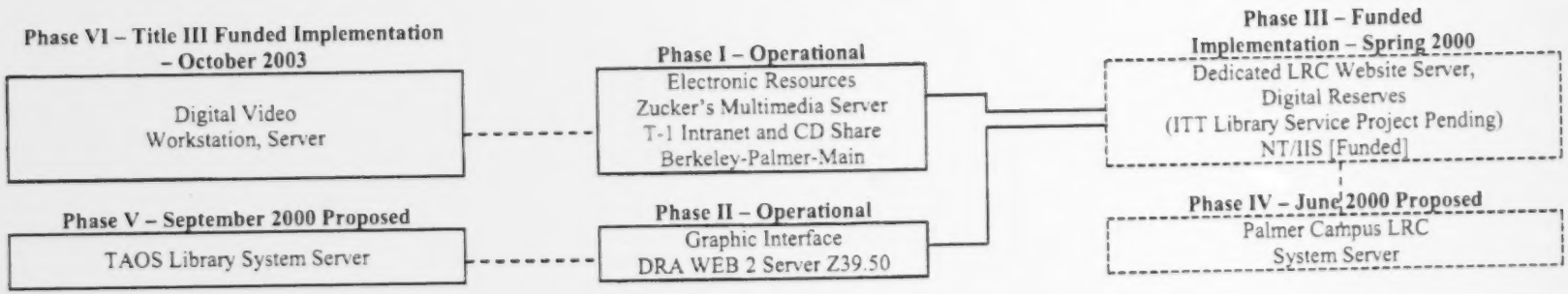
APPENDIX E

Trident Technical College
Learning Resource Centers
Strategic Plan for Comprehensive Library Access



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